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McGREGOR PEAK TIMBER SALE
ENVIRONMENTAL ASSESSMENT

Prepared by Pete Seigmund, Forester, Kalispell/Plains Unit, NWLO

January 2002

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DS-252

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name: McGregor Peak Timber Sale
Proposed Implementation Date: Summer 2002
Proponent: Department of Natural Resources and Conservation, Trust Land Management Division, Northwestern Land Office, Kalispell-Plains Unit

Type and Purpose of Action: The Montana Department of Natural Resources and Conservation (DNRC), Kalispell-Plains Unit, proposes the McGregor Peak Timber Sale. This proposed action would harvest approximately 1.5 million board feet (MMBF)of wood products. Approximately 3.5 miles of new road construction would be needed. The purpose of this project is to: 1) Produce revenue for the Public School Trust 2) Promote the development of historic stand conditions and to promote a biologically diverse and healthy forest. The project is located in section 36, T27N, R25W approximately 25 air miles southwest of Kalispell, Montana. This parcel is located in Flathead County. The 640 acres within the project area are owned by the State of Montana and held in trust by DNRC. Timber sale activities would likely begin in the summer or fall of 2002 and conclude in the year 2005. No other revenue generating opportunities were identified during the scoping and project development phases of this project. As a result, only the sale of forest products was analyzed in this EA.

Location: section 36, T27N, R25W County: Flathead

I. PROJECT DEVELOPMENT	
1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED: Provide a brief chronology of the scoping and ongoing involvement for this project.	Legal Notices were placed in the Sunday edition of the *Daily Interlake* on February 18 & 25, and March 4 2001. Scoping letters were sent on February 12, 2001 to adjacent landowners and interested parties and those groups and individuals on the Northwestern Land Office Kalispell-Plains mailing list. Those involved from the Department of Natural Resources and Conservation include: Jay Shepard, Wildlife Biologist; Norm Merz, Wildlife Biologist; Marc Vessar, Soil and Hydrology Specialist; Patrick Rennie, Archaeologist; Gary Hadlock, Logging Systems and Road Engineer; Beverly O'Brien, Kalispell Office Forest Management Supervisor; Mike Conner, Right-of-way Specialist. Comments and concerns were addressed and incorporated until the completion of the final EA.
2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:	No other governmental agencies have jurisdiction. A road use permit or Reciprocal Access Agreement will be required for access into the project area.
3. ALTERNATIVES CONSIDERED:	Two alternatives were developed for this project, a >no-action alternative= and an >action alternative= which are described as follows: 1) No Action Alternative - This alternative provides the baseline for comparing the environmental consequences of the action alternative. Under this alternative, no timber would be harvested resulting in no revenue for the School Trust. Existing land uses such as road use and recreation would continue to occur. Approximately 280 acres of mixed conifer stands would continue to develop in appropriate western larch/Douglas-fir stand types. Historic stand conditions would not be promoted. 2) Action Alternative - Approximately 485 acres would be harvested using commercial thinning and shelterwood harvest. Expected harvest volume would

	be about 1.5 MMBF. Silvicultural prescriptions would promote the conversion of approximately 280 acres of current mixed conifer and sub-alpine types to appropriate western larch/Douglas-fir types. Historic stand conditions would be promoted as well as improve forest health and stand vigor. Approximately 9.4 miles of roads would be used to access the project area. Existing roads will be upgraded and re-constructed to meet Best Management Practices (BMP's). Approximately 3.5 miles of new road construction would be required to access harvest units.

II. IMPACTS ON THE PHYSICAL ENVIRONMENT

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES N = Not present or No Impact will occur. Y = Impacts may occur (explain below)
4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are fragile, compactible or unstable soils present? Are there unusual geologic features? Are there special reclamation considerations? Are cumulative impacts likely to occur as a result of this proposed action?	[Y] All specialist recommendations and mitigations as well as Best Management Practices (BMP's) will be implemented to protect soil resources. Logging operations will occur only on dry, frozen, or snow covered conditions. Equipment operations will be limited on slopes in excess of 45%. Woody debris and green slash will be retained to provide for long term site productivity. No uniquely fragile or sensitive soils are present within the units. Streamside Management Zones (SMZ's) and adjacent wet areas will be outside the harvest unit boundaries. Refer to Attachment B:2 for watershed and soil existing conditions and direct, indirect and cumulative environmental effects. Refer to Attachment C: Mitigations To Be Implemented for a summary of all mitigations to be implemented. No unique or unstable geology was observed within the project area.
5. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality? Are cumulative impacts likely to occur as a result of this proposed action?	[Y] A comprehensive sediment source survey and stream channel inventory was completed in the spring of 2000. No definable streams were located within the project area. The annual water yield increase due to project actions will remain below the allowable threshold. Implementation of BMP's and project mitigations will protect water and soil resources. Refer to Attachment B:2 for watershed and soil existing conditions and direct, indirect, and cumulative environmental effects. Refer to Attachment C: Mitigations To Be Implemented for a summary of all mitigations to be implemented. There is not a current grazing lease on this parcel.
6. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)? Are cumulative impacts likely to occur as a result of this proposed action?	[Y] The project area is located within Airshed 1. State Hazard Reduction Standards and necessary site preparation will be met by burning landing piles and slash concentrations within harvest units. All burning will be under the coordination of the Montana Cooperative Airshed Group and will comply with all State air quality standards. Dust may be created from log hauling on portions of roads during summer and fall months.
7. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present? Are cumulative impacts likely to occur as a result of this proposed action?	[N] The project area is surrounded by private, industrial forestland. The surrounding area has a history of past and ongoing timber harvest activity. Vegetative communities that occur within the project area will be present after the completion of the

	project. Spatial distribution and compositional characteristics of these communities would be changed. Silvicultural prescriptions will promote historic stand types by conversion of mixed conifer and sub-alpine stands to western larch/Douglas-fir stands. There are no old growth stands located within the project area. Refer to Attachment B:1 Vegetation for a complete description of stand history, existing stand conditions, prescribed treatments, direct, indirect, and cumulative effects. Refer to Attachment C: Mitigations To Be Implemented for a summary of all mitigations to be implemented. Rare plants or cover types listed by the Montana Natural Heritage program have not been found within the project area. An Integrated Weed Management Approach (IWM) will be implemented to limit the potential for the spread and introduction of noxious weeds into the project area. Refer to Attachment C: Mitigations To Be Implemented for a summary of all mitigations to be implemented.
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish? Are cumulative impacts likely to occur as a result of this proposed action?	[Y] The project area provides habitat for a wide variety of wildlife. Field reconnaissance indicated moderate to high use by white-tailed deer and cavity dependent bird species. Signs of moderate use by black bears, elk, and moose are present. Approximately the southern half of the project area is mapped as white-tailed deer winter range by the Montana Dept. of Fish, Wildlife, and Parks. Refer to Attachment B:3 wildlife for existing conditions and direct, indirect, and cumulative effects. Refer to Attachment C: Mitigations To Be Implemented for a summary of all mitigations to be implemented.
9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Sensitive Species or Species of special concern? Are cumulative impacts likely to occur as a result of this proposed action?	[N] No federally listed threatened or endangered species or suitable habitats were found within the sale area. Moderate to high use of the project area by pileated woodpeckers was noted. Maintenance of year round road closures and promoting the development of larger diameter seral species will provide beneficial effects to pileateds. Refer to Attachment B:3 wildlife for existing conditions and direct, indirect, and cumulative effects to pileated woodpeckers. Refer to Attachment C: Mitigations To Be Implemented for a summary of all mitigations to be implemented.
10. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	[N] An archaeological review of the project area was done by the Department of Natural Resources and Conservation archaeologist. No historical or archaeological resources were found.
11. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light? Are cumulative impacts likely to occur as a result of this proposed action?	[N] The project is surrounded by private, industrial timberland and approximately 2 air miles away from the nearest residence. The project area is not visible to the general public. Prescribed treatments will not dramatically change the appearance of the area. Excessive noise or light will not result from project implementation.
12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR, OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project? Are cumulative impacts likely to occur as a result of	[N]

this proposed action?	
13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA: Are there other studies, plans or projects on this tract? Are cumulative impacts likely to occur as a result of other private, state or federal current actions w/n the analysis area, or from future proposed state actions that are under MEPA review (scoping) or permitting review by any state agency w/n the analysis area?	[Y] DNRC is currently pursuing a Reciprocal Access Agreement with Plum Creek Timber Company for permanent, legal access into the project area. No cumulative impacts will occur as a result of this Agreement. A MEPA review will be completed for the Reciprocal Access Agreement.

III. IMPACTS ON THE HUMAN POPULATION

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
14. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N]
15. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[N]
16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so estimated number. Are cumulative impacts likely to occur as a result of this proposed action?	[N] People are currently employed in the wood products industry in the region. Due to the relatively small size of the timber sale program of the Kalispell Office, there will be no measurable cumulative impact from this proposed action on employment.
17. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue? Are cumulative impacts likely to occur as a result of this proposed action?	[N] People are currently paying taxes from the wood products industry in the region. Due to the relatively small size of the timber sale program of the Kalispell Office, there will be no measurable cumulative impact from this proposed action on tax revenues.
18. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed? Are cumulative impacts likely to occur as a result of this proposed action?	[N] There will be no measurable cumulative impacts related to demand for government services due to the relatively small size of the timber sale program, the short-term impacts to traffic, the small possibility of a few people temporarily relocating to the area, and the lack of other timber sales in the adjacent area.
19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[Y] In June 1996, DNRC began a phased-in implementation of the State Forest Land Management Plan (Plan). The management direction provided in the Plan comprises the framework within which specific project planning and activities take place. The Plan philosophy and appropriate Resource Management Standards have been incorporated into the design of the proposed action.
20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract? Are cumulative impacts likely to occur as a result of this proposed action?	[Y] No wilderness areas are located near the project area or accessed through the project area. Roads accessing the project area are gated and do not provide for public access.
21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing? Are cumulative impacts likely to occur as a result of this proposed action?	[N] There will be no measurable cumulative impacts related to population and housing due to relatively small size of the timber sale program, and the fact that people are already employed in this occupation in the region.
22. SOCIAL STRUCTURES AND MORES: Is some disruption	[N]

III. IMPACTS ON THE HUMAN POPULATION of native or traditional lifestyles or communities possible?	
23. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES: Is there a potential for other future uses for easement area other than for timber management? Is future use hypothetical? What is the estimated return to the trust. Are cumulative impacts likely to occur as a result of this proposed action?	[N] At this time, there is no potential for other uses of the project area. The following assumptions were made for estimating return to the trust: 1. The estimated harvest volume is 1,500 MBF. 2. The estimated stumpage value is:$125.00 per MBF. - The estimated stumpage value equals the delivered log prices minus costs and an amount for profit and risk. Costs include logging costs, haul costs, forest improvement fees, development costs, and other costs (e.g. Road maintenance). Profit and risk is the return to the timber buyer that accounts for actual time and effort, some profit for entrepreneurial spirit, and something to cover the expected losses on an occasional sale that is not profitable. - Estimated return to the trust = 1,500 X $125.00 = $187,500 - Estimated return to the trust was calculated as follows: Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return.

EA Checklist Prepared By: Pete Seigmund (Name) Management Forester (Title) November 2001 (Date)

IV. FINDING

25. ALTERNATIVE SELECTED:	The action alternative to harvest timber from 485 acres within the McGregor Peak state section is selected for implementation. It is understood that implementation of the action alternative includes the associated mitigation measures identified in Attachment C. The action alternative meets the objective of generating revenue from trust lands and aids in meeting the state law requirement, to annually offer for sell 42 MMBF of timber. The timber sale has been designed to minimize or avoid impacts to the environment, protecting the long- term productivity of the land in accordance with applicable federal and state laws, and the DNRC State Forest Land Management Plan.
26. SIGNIFICANCE OF POTENTIAL IMPACTS:	For the following reasons, I find that the Action Alternative with implementation of mitigation measures discussed in Attachment C pages 1 and 2, will not have significant impacts on the human environment: A. **SOILS** Measures to be used in this project to limit soil compaction, displacement, and erosion, such as: skidding when soil is dry, frozen, or snow covered; using existing roads and skid trails where possible; trail spacing; and leaving slash on site, are all commonly used methods that effectively protect the soil resource during logging operations. B. **WATER QUALITY** Harvesting 410 acres and constructing 1.6 miles of road in the Pleasant Valley Fisher River watershed would not increase the water yield above the identified "allowable water yield increase" thresholds for this drainage (pg 3, attachment B:2). The lack of identifiable streams within the project area and the addition or maintenance of surface drainage features on 9.4 miles of road further supports the lack of adverse impacts occurring from the action alternative. C. **TIMBER/SUSTAINABILITY** Silvicultural treatments will contribute towards attaining more desirable future conditions for the Kalispell Landscape. Cover type distribution on the Kalispell Landscape currently has a large excess of acres in the mixed conifer cover type and a large deficit in the WL/DF cover type. The silvicultural treatments will convert approximately 300 acres of "Mixed Conifer or Alpine Fir" cover types to the WL/DF cover type that were more abundant in the past, and are considered as desirable future stand conditions. (Attachment B:1). D. **WILDLIFE** Higher localized winter deer mortality might occur, especially in severe winters, as a result of timber harvest further reducing thermal cover in this winter range. The 130 acres of delineated winter range (57 acres thermal cover) deferred from harvest would continue to provide winter range attributes that currently exist, and are in patches of 40 acres or larger that connect to thermal cover on adjacent lands. Patches of thermal cover and areas of lower canopy coverage retained within the harvest units would provide at least some degree of snow intercept function. (Attachment A and B:3) The quality of preferred pileated woodpecker habitat would be reduced on approximately 170 acres, due to the reduction of feeding substrate and potential roosting and nesting trees, along with reductions in canopy closures. Although the abundance of feeding substrate/ acre will be reduced it will still be provided on treated acres in the form of stumps, retained snags, retained fallen trees and retained snag recruits. Potential nesting and roosting trees will be provided in the form of snags, snag recruits and large diameter seral "leave trees". (Attachment B:3) In conclusion, the McGregor Peak Timber Sale is similar to past projects that have occurred in this area over the past several decades. The identified impacts, taken individually or cumulatively, are within accepted

	threshold limits, provides for sustainable timber harvest, and complies with existing laws, policies, guidelines and standards that are applicable to the project.

27. Need for Further Environmental Analysis:

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

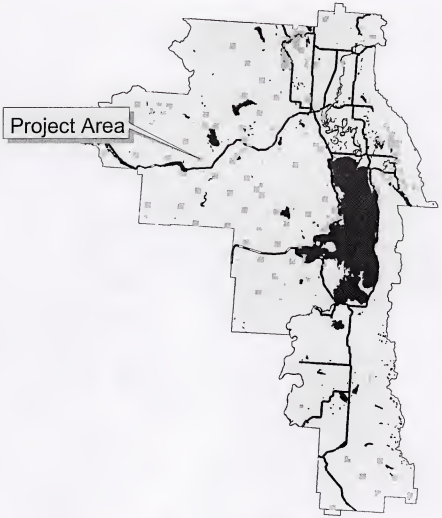
EA Checklist Approved By:

Name: Beverly O'Brien Title: Kalispell Office Forest Management Supervisor

Beverly O'Brien

Signature Date: January 16, 2002

McGregor Peak Timber Sale Vicinity Map



20 0 20 40 Miles

State of Montana Ownership (DNRC)

State and County Roads

Major Lakes and Bodies of Water

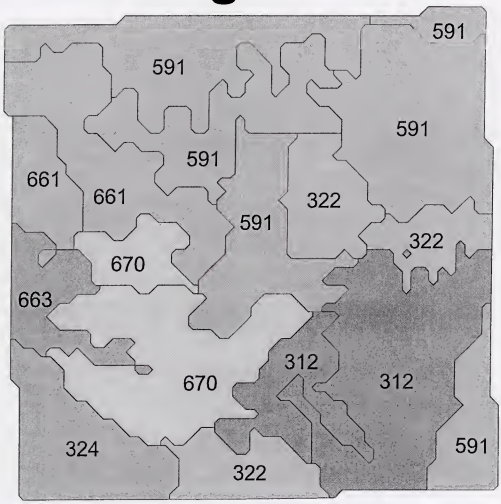
Kalispell Unit Boundary

N

W E

S

Habitat Types
McGregor Peak

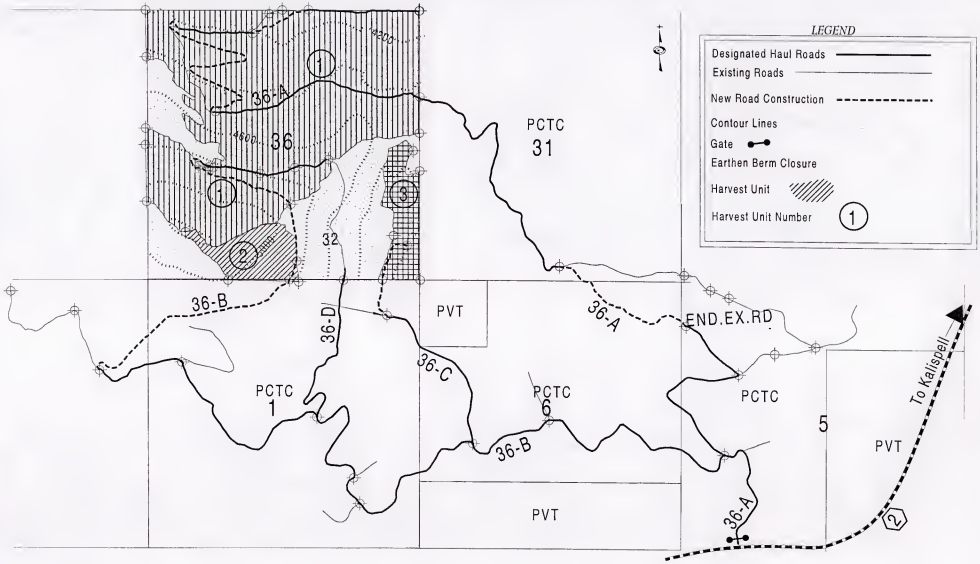


Mac sli.shp

- 312 - PSME/SYAL/CARU
- 322 - PSME/CARU/ARUV
- 324 - PSME/CARU/PIPO
- 591 - ABGR/LIBO/LIBO
- 661 - ABLA/LIBO/LIBO
- 663 - ABLA/LIBO/VASC
- 670 - ABLA/MEFE

McGregor Peak Timber Sale
S. 36, T27N, R25W
Sale and Haul Route Map

Attachment A: Sale and Haul Route Map



McGregor Peak Timber Sale: Vegetation
Existing Environment and Environmental Effects

A. Methods

Existing Forest Condition

The State Forest Land Management Plan (SFLMP) directs DNRC to promote a biologically diverse and healthy forest by implementing a 'coarse filter' approach to land management. An appropriate mix of stand structures and compositions based on historic stand conditions would be promoted on State lands. Estimates of current and appropriate cover types were determined at the landscape level for the entire Kalispell Office. The Kalispell Office used stand level inventory (SLI) data in conjunction with John Losensky's 1997 report *Historical Vegetation of Montana* to determine appropriate distribution of cover types and age classes across the landscape. Table B1: 1 shows current and appropriate cover types for the Kalispell Office.

TABLE B1: 1 Current and Appropriate Cover Types for the Kalispell Office

Cover Type	Current Cover Type (Acres)	Appropriate Cover Type (Acres)	Current Type Minus (-) Appropriate Type (Acres)
ALP/NC	1,778.3	233.2	1,545.1
DF	1,315.2	1,736.4	-(421.2)
LP	1,813.9	1,358.7	455.2
MC	10,803.1	2,849.6	7,953.5
PP	11,311.5	11,367.3	-(55.8)
WL/DF	22,153	31,659.7	-(9,506.7)
WWP	2,248.7	2,322.7	-(74)
OTHER	345.2	241.3	103.9
TOTAL	51,768.9	51,768.9	

ALP/NC = Alpine fir/ upper elevation non-commercial. DF = Douglas-fir. LP = Lodgepole pine. MC = Mixed conifer. PP = Ponderosa pine. WL/DF = Western larch/ Douglas-fir. WWP = Western white pine. Other = non-stocked lands, low elevation non-commercial (roads, streams, gravel pits, etc) or hardwood forests. The Current Type minus Appropriate Type column above lists the excess and deficit (-) acres for each Cover Type.

Stand level data is summarized as follows in Table B1: 2 for stands to be treated within the project area:

TABLE B1: 2 STANDS TO BE TREATED

STAND ID (SEC/STD#)	ACRES	STAND AGE	MBF/ACRE (NET)	CURRENT TYPE	APPROPRIATE TYPE	TREATMENT
36/01	6.6	100	6,000	MC	WL/DF	MOD. SHWD
36/02	68	110	8,000	MC	WL/DF	MOD. SHWD
36/03	25.4	120	4,000	DF	DF	MOD. SHWD
36/04	39.3	100	4,000	MC	WL/DF	MOD. SHWD
36/06	81.6	120	4,000	PP	WL/DF	CT
36/07	22.7	120	5,000	PP	PP	CT
36/09	24.2	80	7,000	WL/DF	DF	CT
36/10	67.4	90	3,000	ALP	WL/DF	MOD. SHWD
36/13	15.4	80	7,000	WL/DF	WL/DF	MOD. SHWD
36/15	53.3	80	8,000	ALP	WL/DF	MOD. SHWD
36/16	42.6	80	4,000	MC	WL/DF	MOD. SHWD
36/17	55.2	80	9,000	WL/DF	WL/DF	MOD. SHWD

By comparing current cover types to appropriate cover types (or desired future condition), it is evident that some of the appropriate western larch/Douglas-fir types are currently typed as mixed conifer or alpine non-commercial. Past timber management and fire suppression have allowed these stands to become dominated by shade tolerant species. Past logging removed many of the large, overstory western larch. Fire suppression has deterred development of serals and allowed shade tolerant trees to regenerate.

B. Stand History and Development

Management activities would promote the development of historic stand conditions. Seral species, namely western larch, are under represented for some forest types in the project area. Past logging removed many of the largest of these trees. Fire suppression has hindered the regeneration of seral species. Management would decrease shade tolerant composition and promote seral regeneration.

The vegetation analysis (including old growth and biodiversity) documented in this environmental analysis is in compliance with the direction specified in the SFLMP Biodiversity Guidance of May 1998.

Existing Conditions:

Two major timber harvests have occurred in the project area. The first harvest of record occurred from 1949 to 1953 and removed approximately 4.3 million board feet (MMBF). Of this 4.3 MMBF, 3,139 MBF (thousand board feet) was western larch and Douglas-fir, 928 MBF was ponderosa pine, and the remaining volume was comprised of true firs and lodgepole pine. Another major timber harvest occurred from 1972 until 1973. This harvest removed approximately 120 MBF of western larch, 1 MMBF of Douglas-fir, 62 MBF of ponderosa pine, and 75 MBF of true firs and lodgepole pine. These past timber harvests removed the largest overstory trees and significantly reduced the composition of seral species in some stands. Shade tolerant species such as sub-alpine fir, grand fir, and englemann spruce regenerated in areas once dominated by western larch and Douglas-fir. Ponderosa pine composition was also significantly reduced on the drier aspects and habitat types. Field reconnaissance indicated that the majority of large stumps were western larch and Douglas-fir with ponderosa pine stumps dominating on drier aspects.

Current stand level inventory (SLI) data indicates that shade tolerant species have become more dominant in the overstory. In the absence of fire, seral species have been unable to re-establish a dominant presence in many of the stands. By allowing high density, shade tolerant trees to persist, the development of large diameter trees is unlikely.

Environmental Effects

A prominent ridge runs east to northeast through the southern third of the section. This ridge roughly separates the wetter (north) aspects from the drier (southern) aspects. The moister aspects have experienced the most significant change in stand structure and composition. Historically these aspects had a high composition of western larch that

would suggest a non-lethal to mixed severity fire regime that would perpetuate a predominance of western larch in the overstory. Due to the productivity and large trees located in this area it was logged the most intensive in the past. Six of the 10 stands located north of the ridge are currently typed as mixed conifer or alpine non-commercial. These stands were historically western larch/Douglas-fir stands. Silvicultural prescriptions will be implemented that initiates conversion of current stand types to appropriate western larch/Douglas-fir stand types. This will be accomplished by removing shade tolerant species to provide adequate growing space for seral species. Groups and small patches of shade tolerant species will be removed as appropriate to increase seral composition and to improve vigor and growth in residual trees. Small patches of stagnant and low vigor trees will be removed. The main silvicultural method will be a modified shelterwood harvest that leaves groups and individual healthy trees. The quantifier 'modified' refers to uneven aged management that will result in a variety of age classes and spatial distribution of leave trees. Western larch, ponderosa pine, and Douglas-fir will be the favored leave trees. A manageable understory is present in portions of the unit. Slashing of advanced shade tolerant regeneration and subsequent planting of western larch in some areas of the unit will be done as needed to provide for adequate regeneration of western larch. Seral regeneration will be encouraged and promoted by appropriate site preparation.

The drier aspects will be commercially thinned to remove intermediate and co-dominant shade tolerant species. Diseased and insect infected trees will also be removed. Western larch and ponderosa pine will be favored leave trees. Thinning intermediate and co-dominate trees should improve growth and vigor in residual trees and allow larger sized trees to develop.

C. Old Growth

Affected Environment

Old growth will be managed to meet biodiversity and fiduciary objectives in the SFLMP, pursuant to state law.

As per the State Land Board's decision in February, 2001, the DNRC adopted the definitions for old growth based on minimum number and size of large trees per acre and age of those trees as noted in Old-Growth Forest Types Of The Northern Region, by P. Green, J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann (1992, USFS Northern Region, Internal Report).

There are no stands within the project area that meet DNRC's definition of old growth.

Environmental Effects

Past logging removed the majority of the largest trees. Higher density, shade tolerant stands have developed and are deterring the development of large diameter trees. Seral species, namely western larch and ponderosa pine, are under represented for some of the stands. Fire suppression has hindered the regeneration of seral species. As a result, the

stands located within the project area are unlikely to develop old growth attributes of WL/DF cover types that were present in the past. Management activities would promote the development of historic stand conditions in the project area by encouraging the development of larger diameter trees, increasing seral composition, and providing for regeneration of western larch. High quality snags would be retained and buffered. Snag recruitment trees would also be retained. An increase in western larch composition would increase the number of high quality snags in the future. A minimum of 10 to 15 tons of large woody debris would be left per acre.

D. Cumulative Effects on Vegetation

Cumulative effects must address the collective impacts on the environment of the proposed action when considered in conjunction with other past and present actions that are related to the proposed action by location or generic type. Related future actions must also be considered when these actions are under concurrent consideration by any State agency. State lands within the project area are bordered by private, industrial timberlands. Kootenai National Forest lands are scattered throughout the surrounding area. Private timberlands have experienced extensive management within the past 25 years. Much of the harvest activity was regeneration cutting in the form of clearcuts or seedtree harvests. Forest Service lands have had little management activity.

Surrounding Lands

The majority of land surrounding (within a 2 mile radius) the project area is comprised of private, industrial timberlands managed by Plum Creek Timber Company. These lands are managed intensively for wood products. Most of the large-scale logging occurred 15 to 20 years ago. Timber sale activity and harvests are continuing and ongoing in the area surrounding McGregor Peak.

If the no-action alternative were chosen, forest stands within the project area would continue to increase in shade tolerant dominated compositions. Regeneration of seral species would not be promoted in the absence of fire or other disturbances. Fire regimes and intensities would continue to become more severe and tend toward stand replacement. Past timber management on private lands within the project area have created younger age classes and increased the fragmentation of forest cover surrounding the project area. A no-action alternative would not add any cumulative effects to vegetation in regards to private lands surrounding the project area.

If the action alternative is chosen, it should promote the conversion of some current stand types to appropriate stand types. Ponderosa pine and western larch/Douglas-fir stand types would be maintained and perpetuated. Approximately 300 acres would be converted to appropriate western larch/Douglas-fir cover types. Development of larger diameter trees would be promoted as well as regeneration of seral species. Given the high percent of industrial private land in the surrounding area and the subsequent ongoing nature of timber harvest, the action alternative would have very little cumulative effects on vegetation. No future actions are planned within the project area by the Department of Natural Resources and Conservation or any other State agency.

McGregor Peak Timber Sale: Water and Soil Assessment
Existing Environment and Environmental Effects

Analysis Area
The proposed McGregor Peak Timber Sale is located approximately 20 air miles southwest of Kalispell, Montana (T27N, R25W, Section 36). The majority of the section is within the Pleasant Valley Fisher River drainage with the remaining portion drained intermittent 'face' drainages to the south.

Elevations in the project area range from 4000 feet on the northern boundary to 5160 feet at the watershed divide. Precipitation throughout the project area is approximately 20" per year.

Water Uses and Regulatory Framework
This portion of the Kootenai River basin, including the Pleasant Valley Fisher River watershed is classified as B-1 by the State of Montana Department of Environmental Quality (DEQ), as stated in the Administrative Rules of Montana (ARM 17.30.607). The water quality standards for protecting beneficial uses in B-1 classified watersheds are located in ARM 17.30.623. Water in B-1 classified waterways is suitable for drinking, culinary and food processing purposes after conventional treatment, bathing, swimming and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers, and agricultural and industrial water supply.

State water quality regulations prohibit any increase in sediment above naturally occurring concentration in water classified B-1. Naturally occurring means condition or materials present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Reasonable land, soil and water conservation practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. The State of Montana has adopted Best Management Practices (BMPs) through its non-point source management plan as the principle means of meeting the Water Quality Standards.

Section 303(d) of the Clean Water Act (CWA) and the EPA Water Quality Planning Regulations require each state to identify watersheds that contain water quality limited segments. A WQLS is a portion or entire lake, stream or other body of water that is not fully meeting state water quality standards or have intended beneficial uses that are being threatened. The Pleasant Valley Fisher River is not on the 1996 303(d) list, however the Fisher River approximately 25 miles downstream of the project area is listed for not fully meeting the beneficial uses for cold water fisheries and aquatic life support.

All rules and regulations pertaining to the Streamside Management Zone (SMZ) Law will be followed. An SMZ width of 100 feet is required on Class I and II streams when the slope is greater then 35%. An SMZ width of 50 feet is required when the slope is less than 35%.

Water Rights and Beneficial Uses
Water rights for surface water exist within the township/range on the Pleasant Valley Fisher River for irrigation, stock watering and fish propogation..

Water Resource Measure Indicators and Methodology
The methods applied to the project area to evaluate potential cumulative effects include the Rosgen Stream Classification and the R-1 Channel Stability Rating (Pfankuch, 1975). The tools were deemed the most appropriate to provide information on stream channel form, function and resistance to change

Water yield thresholds were set in accordance with the SFLMP Watershed RMS#7 after considering the condition of the channel, beneficial uses and potential for adverse impacts. Cumulative water yield increase percentage was calculated using the Equivalent Clearcut Acres (ECA) method outlined in Forest Hydrology Part II (Haupt et al. 1974).

Cumulative Watershed Effects
Cumulative watershed impacts are defined as impacts that result from combined past activities in the watershed. Timber harvest and associated activities affect the timing, distribution and amount of water yield in a watershed. Water yields increase in proportion to the percentage of canopy removed because removal of live trees reduces the amount of water transpired, leaving more available for soil saturation and runoff. Canopy removal also decreases interception of rain and snow and alters snowpack distribution and snowmelt which leads to further water yield increases. Higher water yields may lead to increases in peak flow and peak flow duration, which could result in accelerated streambank erosion and deposition of fine sediment.

The cumulative effects boundary for this proposal is the Pleasant Valley Fisher River watershed upstream from the confluence with Bear Springs. This cumulative effects area is approximately 11,885 acres. This is an appropriate scale of analysis due to the size of the project versus the watershed size and the low potential for impacts.

Existing Condition

Hydrology
The Pleasant Valley Fisher River is a Class I perennial, fish-bearing tributary of the main Fisher River approximately 25 miles downstream. Management of the drainage is primarily Plum Creek Timber Company, private non-industrial, and State of Montana Trust Lands. Approximately 450 acres of the project area is in the Pleasant Valley Fisher River watershed. During spring of 2000, a complete sediment source inventory and stream channel inventory was conducted on this parcel. No defined channels were found on the parcel although ephemeral swales are present.

The remaining 210 acres of the project area is drained by ephemeral swales towards the south. Field reconnaissance failed to find any scoured channels that direct runoff to any one source. For this reason, no water yield analysis is necessary.

Cumulative Effects
Cumulative water yield increase percentage was calculated using the Equivalent Clearcut Acres (ECA) method outlined in Forest Hydrology Part II (Haupt et al. 1974). Data incorporated into the model included information from other landowners within the watershed with the majority of the information being harvest data from Plum Creek Timber Company.

The annual water yield threshold of concern for this watershed was set at 14% in accordance with the State Forest Land Management Plan (SFLMP) watershed Resource Management Strategy #7, after considering the channel condition, beneficial uses and potential for adverse impacts. This 14% equates to approximately 4,160 equivalent clearcut acres. Cumulative ECA in the watershed is 1,633 acres or 6% annual water yield increase over pre-disturbance levels.

Fisheries
According to the Montana Rivers Information System (MRIS), the Pleasant Valley Fisher River contains several species of fish including mountain whitefish, redside shiner, sculpins, largescale sucker, rainbow trout and westslope cutthroat trout. Westslope cutthroat trout are considered to be a species of special concern by the Montana Natural Heritage Program. Data from MRIS suggests that westslope cutthroat trout are year-round residents in the Pleasant Valley Fisher River above the Bear Spring confluence, however their presence is considered rare.

Soils
Soils within the project area have not been included in recent Land System Inventories (LSI) completed by the Kootenai or Flathead National Forests. This area is slated to be surveyed by the Natural Resources Conservation Service within the next decade. By looking at the project area on the ground and comparing nearby LSI data, it is apparent that the soils found in the project would likely be included in the 352 and 355 landtypes.

The ***352 landtype*** is found on rounded valley sideslopes with northerly aspects and elevations of 2200-5200 feet. Slopes are generally in the 20-60% range. Soils in this landtype are formed in volcanic ash-influenced loess overlying dense glacial till. The underlying bedrock and rock fragments are derived from the Precambrian Belt Supergroup. This landtype is well suited for timber management with high to very high productivity. By operating

harvest equipment when soil is dry, frozen or snow-covered, impacts to soil productivity is limited. Road construction is well suited for this landtype as well, however steep cutbanks tend to slump and are difficult to revegetate. Seeding immediately after construction helps to improve revegetation success.

The ***355 landtype*** is very similar to the 352 landtype with the exception of rocky outcrop which are more prevalent in the 355 landtype. This landtype contains convex mountain slopes which have been glacially rounded. Slopes range from 20-50% on northerly aspects with elevation ranges of 3000-5200 feet. Soils found in this landtype are formed in volcanic ash-influenced loess overlying dense glacial till. Soil productivity is moderate to high in this landtype making it well suited for timber management. Equipment restrictions similar to the 352 landtype help maintain soil productivity. Road construction is moderately suited to this landtype. Bedrock outcrops limits excavation and soils surrounding the outcrops may be difficult to revegetate.

Cumulative Effects
The project area has been harvested in the past using ground-based harvest systems. Skid trails can be found throughout the section however they are revegetated with species mimicking adjacent areas. The skid trails used for past harvest show signs of reduced productivity most likely due to soil compaction and displacement.

Environmental Effects

This section discloses the anticipated indirect, direct and cumulative effects to water resources within the affected environment from proposed actions. Past current and future planned activities on all ownerships within the Pleasant Valley Fisher River watershed have been taken into account for the cumulative effects analysis.

Two alternatives are developed for the McGregor Peak Timber Sale. Table I displays road and harvest information within the Pleasant Valley Fisher River by alternative. Additional harvest would be completed on the southern portion of the project area which is drained by ephemeral draws. The harvest and road construction data on the southern portion of the project area can be found in the text portion of the effects analysis.

Table I: Proposed Activities by Alternative within the Pleasant Valley Fisher River Drainage

Alternative	Acres of Harvest	ECA Generated	Cumulative ECA	Allowable ECA	Miles of Road Construction	Miles of Road Improvements
No Action Alternative	0	0	1633	4160	0	0
Action Alternative	410	320	1953		~1.6	~1

The primary concerns relating to aquatic resources within the affected environment are potential impacts to water quality from sources outside the channel as well as inside the channel. In order to address these issues the following parameters are analyzed by alternative:

-Miles of new road construction and road improvements
-Increases in ECA and annual water yield

Direct and Indirect Effects of Activities on Water Quality
Land management activities such as road construction, timber harvest and grazing can potentially increase fine sediment production and delivery to waterbodies if not properly designed. Increases in suspended sediment levels may decrease salmonid reproductive success and reduce the abundance of food organisms.

No Action Alternative
No timber harvest or road construction is associated with this alternative. Harvested acres within the watershed would continue to recover as vegetation growth occurs.

Action Alternative
Approximately 485 acres of the state section would be treated with a silviculture prescription. Approximately 3.6 miles of road (1.6 miles in the Pleasant Valley Fisher River drainage and 2 miles drained by ephemeral draws to the

south) would be constructed with Best Management Practices. Drainage improvements would be implemented on approximately 9.4 miles of road (1 mile in Pleasant Valley Fisher River drainage and 8.4 miles drained by the ephemeral draw to the south) would be installed to reduce surface erosion. Due to the location of roads and harvest units away from surface water, sediment increases to surface water are not likely to result from the implementation of this alternative. Ephemeral swales would be protected with equipment restriction zone to prevent ground disturbance near potential water courses.

Cumulative Watershed Effects
A Level 2 analysis as described in the SFLMP Record of Decision (page 22) was completed for this project. Due to the scale of the project, beneficial uses and low potential for impact, no further analysis was deemed appropriate. Past, ongoing and planned future activities were considered during the cumulative effects analysis.

Water Yield
No Action Alternative
No timber harvest or road construction activities are proposed under this alternative, therefore no water yield increase would result from implementation of this alternative. Water yield would continue at or near the current level and would decline as past harvest units within the watershed regenerate and move closer to pre-disturbance levels.

Action Alternative
Approximately 485 acres (410 in the Pleasant Valley Fisher River and 75 on the southern face of the section) of timber harvest would be implemented under this alternative. Approximately 315 ECA would be generated from timber harvest and an additional 4 ECA from road construction within the Pleasant Valley Fisher River watershed.. Considering all past, present and planned future activities in the watershed, the cumulative ECA would be 1953. With a threshold of concern set at 14% annual water yield increase, the allowable ECA in this watershed is 4160 ECA.

The face drainage area on the southern portion of the watershed would have 75 acres of harvest which equates to 30 ECA. The water yield increase from the 30 ECA would not likely result in scoured channels, and therefore would not deliver sediment to downstream sources.

Water Quality
No Action Alternative
No timber harvest or road construction is associated with this alternative. Water quality would improve or degrade as dictated by natural events.

Action Alternative
Due to the location of harvest units and roads away from streams the proposal will not likely result in adverse impacts to water quality. By implementing BMPs on all new and existing roads and harvest units, sediment introduction into surface waterbodies is not like to result in adverse cumulative effects to water quality.

Direct and Indirect Effects to Fisheries

No Action Alternative
No timber harvest or road construction activities are associated with this alternative. Fisheries resources would continue as natural events dictate.

Action Alternative
The harvest and road activities associated with this alternative are located away from streams to reduce the potential for sediment introduction. Stream within the project area are considered ephemeral and do not contribute to downstream sources. This drainage pattern reduces the risk of sediment introduction. Therefore it is unlikely that the implementation of this alternative would adversely affect fisheries resources.

Fisheries Cumulative Effects
No Action Alternative
Current fisheries habitat and populations would change in response to natural events.

Action Alternative
Due to the location of harvest units and roads away from streams and the lack of surface water, there is low potential for sediment introduction from harvest units and roads. Current fisheries habitat and populations would not likely be adversely affected with the implementation of this alternative.

Direct and Indirect Effects to Soils

No Action Alternative
No timber harvest or road construction activities are proposed under this alternative. Existing skid trails would continue to revegetate and increase in productivity as compaction is reduced by annual freeze-thaw cycles.

Action Alternative
Approximately 485 acres of timber harvest and 3.6 miles of road construction are associated with this alternative. Up to 15 percent of the harvest area could be used as skid trails and landings. This would result in varying degrees of potential impacts on up to 73 acres of skid trails. As exhibited by existing skid trails, adverse effects to soil productivity may result on these trails. Implementing mitigation measures for skidding would reduce the potential for adverse impacts. By designating skid trails and restricting mechanized harvest operations to periods of dry, frozen or snow-covered conditions the risk to soil productivity is reduced.

Cumulative Soil Effects
No Action Alternative
No timber harvest or road construction activities are proposed under this alternative. Existing skid trails would continue to revegetate and increase in productivity as compaction is reduced by annual freeze-thaw cycles.

Action Alternative
Cumulative effects would be controlled by limiting the area of adverse soil impacts to less than 15% of harvest units through implementation of BMPs, skid trail planning on tractor units and limiting operations to dry or frozen conditions. Up to five acres of skid trails and landings may incur reduced soil productivity through moderate-high soil compaction in Units 1 and 2. Future harvest opportunities would likely use the same road system, skid trails and landing sites to reduce additional cumulative impacts. Large woody debris would be retained for nutrient cycling long-term soil productivity.

GENERAL MITIGATION MEASURES:
*Limit equipment operations to periods when soils are relatively dry,(less than 20%), frozen or snow covered to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture conditions prior to equipment start-up.

*On ground skidding units, the logger and sale administrator will agree to a general skidding plan prior to equipment operations. Skid trail planning would identify which main trails to use, and what additional trails are needed. Trails that do not comply with BMP's (i.e. draw bottom trails) would not be used and may be closed with additional drainage installed where needed or grass seeded to stabilize the site and control erosion.

*Tractor skidding should be limited to slopes less than 40% unless there would not be excessive erosion. Short steep slopes above incised draws may require a combination of mitigation measures based on site review, such as adverse skidding to ridge or winch line skidding to more moderate slopes (less than 40%).

* Slash Disposal- Limit disturbance and scarification to 30-40% of harvest units. No tractor piling on slopes over 40%. Consider lop and scatter or jackpot burning on steeper slopes. Accept disturbance incurred during skidding operations to provide adequate scarification for regeneration.

* Retain 10 to 15 tons large woody debris and all fine litter feasible following harvest. On commercial thin units where whole tree harvesting is used implement one of the following mitigations for nutrient cycling; 1)use in woods processing equipment that leaves slash on site, 2)for whole tree harvest, return skid slash and evenly distribute within the harvest area, or 3) cut off tops from every third bundle of logs so that tops are dispersed as skidding progresses.

McGregor Peak – Wildlife Assessment

AFFECTED ENVIRONMENT

COARSE FILTER

The Department of Natural Resources and Conservation (DNRC) attempts to promote biodiversity by taking a coarse filter approach thereby favoring an appropriate mix of stand structures and compositions on state lands (DNRC 1996). Appropriate stand structures are based on ecological characteristics (e.g., land type, habitat type, disturbance regime, unique characteristics). A coarse filter approach "assumes that if landscape patterns and process (similar to those species evolved with) are maintained, then the full compliment of species will persist and biodiversity will be maintained" (Jensen and Everett, 1993).

Cumulative Effects

Aerial photos and field observations of the surrounding area indicate private timber property adjacent to the McGregor Peak state section has been affected by timber harvest in recent decades. The DNRC section contains relatively dense, mature forest stands with a mixture of conifer species. The older, more dense forest stands of this state section contains habitat qualities such as abundant tree foliage providing "snow intercept" for ungulate winter range, and decaying Douglas-fir and other tree species providing abundant foraging opportunities for species such as the pileated woodpecker.

FINE FILTER

DNRC cannot assure that the coarse filter approach will adequately address the full range of biodiversity, and therefore DNRC also employs a 'fine filter' approach for threatened, endangered, and sensitive species. The fine filter approach focuses on a single species' habitat requirements (DNRC 1996).

Threatened and endangered species:

Bald eagle:

Bald eagles are generally associated with lakes or rivers in Montana. McGregor and Little Bitterroot Lakes are both approximately 2 miles from the McGregor Peak section. The nearest known active bald eagle nest is 3-3.5 air-miles from the state section on Little Bitterroot Lake (Township 27N, Range 24W, Section 7). No nesting of eagles is expected to occur in the project area.

Grizzly bear:

The project area is outside of the Northern Continental Divide Ecosystem and Cabinet-Yaak Ecosystem grizzly bear recovery areas. Presently, grizzly bears are not known to consistently inhabit the area containing the state section.

Wolf:

Historically, wolves have occupied the area but at present are not known to use the area for denning or rendezvous activity. The closest consistent wolf activity in recent years has been in the Pleasant Valley, approximately 8 air-miles to the north. In recent years, wolves have been removed on multiple occasions from the Pleasant Valley area due to livestock depredation. Three sub-adult wolves were removed in March of 2000 from the Little Wolf pack when it was near the Pleasant Valley area. Ten to eleven wolves remain in the Little Wolf pack at present. Wolves were sighted in 1999 in the Lang Creek drainage 11-12 air miles west of the project area (Tricia O'Connor, Plains/Thompson Falls R.D., Lolo National Forest). Wolf denning and/or rendezvous sites are not expected in the project area.

Lynx:

The section ranges from approximately 4000 to 5000 feet in elevation. In the recent past, areas below 5000 feet have not been considered typical lynx habitat, although it is now known lynx do use areas as low as 4000 feet in Montana and 4750 feet in Washington (Squires 2000, Koehler 1990). Surrounding ridge systems descending from 6700 foot Meadow Peak connect the section with more typical habitat and elevations used by lynx. Snowshoe hare presence and adjacency to appropriate habitat increase the possibility of transient lynx use on the McGregor Peak section. Lynx denning habitat (mature spruce-fir with abundant coarse woody debris) is not present on the section or in the surrounding vicinity. Lynx use of the project areas is not expected.

Sensitive species:

Peregrine falcon:

Although peregrine falcons have been de-listed from threatened status (Federal Register, Volume 64, Number 164), they are still taken into consideration in project analyses. Although there is no Endangered Species Act authority (except a 5 year monitoring period following de-listing), the species is regarded as sensitive and will be taken into consideration when present. There is no preferred nesting habitat (large cliffs or rock outcrops) within the project area. Therefore, use of the project area is not expected.

Fisher:

In the western United States, including northwestern Montana, fisher avoid openings and prefer mature to old forest stands containing large live trees, snags, and logs (Ruggiero et al. 1994). Fisher use forested riparian areas for travel corridors and to a lesser degree for resting habitat (Jones 1991). No perennial streams occur in the project area. Aerial photographs indicate that a majority of the surrounding forest stands on industrial private ownership have not been managed with a philosophy of retaining preferred fisher habitat. Fisher use the project area is not expected.

Flammulated Owl:

Flammulated owls are listed by DNRC as a sensitive species due to their use of old growth open ponderosa pine habitats (DNRC 1996). Flammulated owls prefer old stands of open ponderosa pine and Douglas-fir. They usually nest in cavities in 12-25" dbh aspen, ponderosa pine, or Douglas-fir excavated by pileated woodpecker or northern flickers. The only habitat believed to be flammulated owl habitat occurs in the southwest corner of the project area. This area is not proposed for harvest, therefore flammulated owls are not expected to be affected by this project.

Pileated woodpecker:

Preferred pileated woodpecker habitat consists of mature and old forest stands containing large western larch, ponderosa pine, and to some extent Douglas-fir. Pileated woodpecker nest and roost trees are generally greater than 20 inches in diameter at 4.5 feet above the ground, generally referred to as "diameter at breast height", or "DBH" (Bull 1987). Presently there is 270 acres of potential pileated woodpecker habitat on the section . Sign of pileated woodpecker feeding activity is present.

Ungulate Habitat:

Elk and moose habitat:

Elk and moose are known to use the McGregor Peak section. Pellet groups and tracks of both species have been observed on the section. This use probably occurs in the non-winter period.

White-tailed deer winter range:

Montana Department of Fish, Wildlife, and Parks mapped approximately the southern 1/2 of the project area as white-tailed deer winter range (Approximately 360 acres of 25,120 acres of winter range along Highway 2 in the Kalispell Unit). Canopy closure of 70% or greater is one of the criteria used to distinguish effective white-tailed deer winter range in the State Forest Land Management Plan implementation guidance (DNRC 1996b). The Project Area contains 128 acres of thermal cover on designated winter range.

ENVIRONMENTAL EFFECTS

COARSE FILTER

Cumulative Effects

Within the general vicinity of the proposed project area, the trend of recent decades would continue of decreasing acreage of densely stocked, late successional coniferous stands. A cumulative effect of the proposed project would be to move forest stand structure and composition toward a situation more similar to historic conditions. Historically stands had relatively more abundant shade-intolerant species such as western larch, ponderosa pine, and Douglas-fir in large diameter classes, and less shade-tolerant tree species. This would produce an associated decline in pileated woodpecker foraging opportunities, white-tailed deer thermal cover, and hiding cover for a variety of late-successional associated species.

FINE FILTER

Threatened and Endangered Species

No threatened or endangered species are expected to be affected by the proposed project.

Sensitive species:

Pileated woodpecker:

No-action Alternative

Under the no-action alternative, pileated woodpecker habitat would not be affected. The proposed project area would provide feeding, roosting, and nesting habitat. Stand replacing wildfire and/or insect infestation could possibly reduce canopy closure in the future given the continued exclusion of lower intensity natural wildfire.

Action Alternative

Mature and old stands with greater than 40 percent canopy closure will be commercially thinned on approximately 50 acres. Commercially thinned stands will be well stocked with mature ponderosa pine and western larch, allowing for the retention of a majority of the present and potential roosting and nesting habitat. The release from competition may allow for increased growth rates in the retained ponderosa pine and western larch. This may also increase the closure of the mature component of the canopy. The regeneration of young conifers and retention of mature ponderosa pine and western larch would eventually allow the commercially thinned stands to become relatively dense, multi-canopied stands more typical of preferred pileated woodpecker habitat.

Mature and old stands with greater than 40 percent canopy closure harvested with the modified shelterwood treatment on 170 acres represents a reduction in preferred pileated woodpecker habitat. Within the modified shelterwood treatments, a reduction in feeding habitat would occur with the removal of Douglas-fir, Engelmann spruce, grand fir, and a reduction in present or future nesting habitat would occur with the removal of a certain amount of closely-spaced ponderosa pine and western larch. Additionally, the reduction in canopy cover would reduce nesting habitat.

Cumulative Effects

The reduction in closed canopy mature to old forest stands adds to the cumulative reduction in pileated woodpecker habitat that has occurred in the general vicinity of the proposed project area in recent decades due to timber harvest.

Ungulates: White-tailed Deer

No-action Alternative

The proposed project area would continue to progress toward mature conditions with more dense, late successional stands. Snow intercept by conifers, and thermal cover for ungulates in general, would be greater under this alternative, although browse production may be lower in the long term.

Action Alternative

The proposed project would reduce the quality of or remove thermal cover on 71 acres within the mapped winter range, while leaving 57 acres of thermal cover in the current state. Within the treatment areas, small pockets of thermal cover might be retained. Additionally, canopy coverage near the major ridge in the area would be retained at a higher rate than the rest of the unit. Elk, deer, and moose security cover would be maintained to the extent possible, with road restrictions. This primarily pertains to security from human disturbance by activities including hunting, firewood gathering, and general ATV or vehicle disturbance. Increased browse production may be a beneficial aspect of decreased coniferous canopy cover, particularly on the southern exposures, however, the lack of thermal cover might prevent use of the increase in forage, especially in winter.

Cumulative Effects

The area surrounding the project area is heavily managed, resulting in the reduction of thermal cover. Although connectivity of thermal cover would be retained by the proposed action, the present lack of thermal cover combined with the further reduction proposed is expected to lead to further decreased effectiveness and carrying capacity of the winter range. This reduction is expected to last until thermal cover is developed in harvested units, many of which are in regeneration stages. The effects of the lack of thermal cover could result in increased localized mortality of white-tailed deer during the winter, especially in high snow years.

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MITIGATIONS TO BE IMPLEMENTED

Recommendations were integrated into the project design to mitigate resource concerns associated with the proposed actions of this project. Mitigation measures specific to each major resource concern are addressed. Many mitigation measures were initially incorporated into the project design and subsequent recommendations by resource specialists were applied to the appropriate resource. The following mitigation measures would be applied if the action alternative were chosen.

A. Pileated Woodpecker

- Retain high quality western larch, ponderosa pine, and Douglas-fir for cavity nesting.
- Promote the regeneration and development of larger diameter seral species.
- Maintain effective road closures and protect standing snags from firewood cutting.

B. Ungulates

- Provide for ungulate security by maintaining effective road closures.
- Retain areas of denser crown closure along ridge tops for high quality thermal 'groups'. Leave areas between harvest units to provide for security and hiding cover.
- Emulation of natural processes should provide additional forage opportunities for ungulates.

C. Soils

- In order to protect fertile soils located within the project area, the season of use will be limited to periods when soil moisture conditions are favorable to avoid compaction and displacement (soil moisture content at a 4-inch depth is less than 20% of oven dry weight, or minimum frost depth of 4 inches, or a minimum snow depth of 16 inches loose or 9 inches packed).
- Limit tractor skidding to slopes less than 40% and brush piling on slopes less than 35%.
- Maintain 10-15 tons of large woody debris 3" in diameter or greater per acre and as much fine litter (tree tops and branches) as feasible for nutrient cycling and long-term site productivity.
- The logger and sale administrator will agree to a general skidding plan prior to harvest operations in order to limit ground disturbance due to skidding operations.

D. Noxious Weeds

An Integrated Weed Management (IWM) approach will be implemented if the action alternative is chosen. The following IWM measures will reduce the possibilities of weed encroachment and spread.

- All equipment associated with road work and harvesting operations will be cleaned of plant parts, dirt, and weed seed to prevent the possibility of seed dispersal by equipment.
- All newly disturbed areas of soil associated with roadwork will be promptly grass seeded with a site adapted seed mix to deter the establishment of noxious weeds and to prevent erosion.
- Spray haul routes in the spring of 2002 under the Flathead County/DNRC Weed Management Agreement.
- Monitor project area and contract herbicide spraying as needed to control spot outbreaks of noxious weeds.

E. Water

- Ephemeral swales would be protected with equipment restriction zone to prevent ground disturbance (sediment source) near potential water courses.

V. COMPARISON OF ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

Table C: 1 compares the environmental consequences of the action and no-action alternatives. Environmental consequences are listed by each major resource concern. The scientific basis for the environmental effects summarized here is discussed in more detail in Attachment B:1, B:2, and B:3.

TABLE C: 1: SUMMARY OF EFFECTS OF THE ALTERNATIVES

PROJECT EFFECTS ESTIMATES	ALTERNATIVES	
	NO ACTION	ACTION
A. Pileated Woodpecker	No change from present. A change from a non-lethal fire regime to a stand replacement fire regime would reduce feeding and cavity nesting opportunities.	Maintain road closures and protect existing snags. The regeneration and development of larger diameter seral species would increase cavity-nesting opportunities in the future.
B. Ungulates	Development of denser, later successional forests would increase snow intercept and thermal cover. Browse availability would decrease in the future in the absence of natural disturbances.	Thermal and hiding cover would be reduced. Retention of dense pockets between harvest units would provide for thermal and hiding cover. Maintaince of effective road closures would provide for ungulate security. Browse availability would increase
C. Soils 1. Compaction	No change in area.	Increase in area compacted due to new road construction. Mitigations and BMP's required to minimize compaction in harvest units.
2. Displacement	No change in area.	Potential increase on steep slopes (>35%). Mitigations and BMP's required to minimize displacement in harvest units.
3. Erosion	No change in area. Continued erosion on existing roads with steep grades and inadequate surface drainage.	Potential temporary increased risk due to new road construction. Controlled access, grass seeding, reclamation of some existing roads, and surface drainage on trails and roads will limit potential for erosion.
D. Noxious Weeds	Occurrences of noxious weeds are high along roads. A potential increase in spread is possible in the absence of control measures.	Controlled road access and implementing Integrated Weed Management (IWM) measures should limit the potential for spread of noxious weeds.